HOBART WELDERS

**OM-948** 213 220B

May 2003

**Processes**

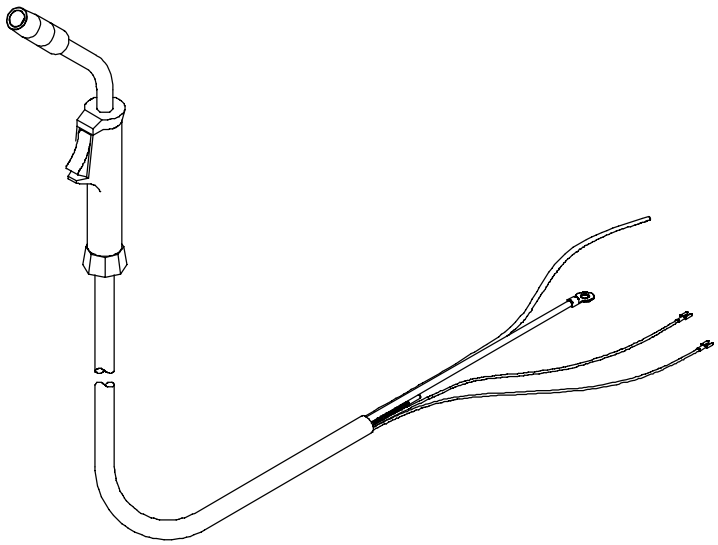
Flux Cored (FCAW) Welding

MIG (GMAW) Welding (Optional)

**Description**

Semi-Automatic, Air-Cooled Flux Cored (FCAW) And MIG (GMAW) Welding Gun

# H-9 Gun



# OWNER'S MANUAL

Visit our website at

**www.HobartWelders.com**

# From Hobart to You

*Thank you* and *congratulations* on choosing Hobart. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

This Owner's Manual is designed to help you get the most out of your Hobart products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite.

We've made installation and operation quick and easy. With Hobart you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide the exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.

ISO 9001:2000 REGISTERED QUALITY SYSTEM

Hobart is registered to the ISO 9001:2000 Quality System Standard.

Hobart Welders manufactures a full line of welders and welding related equipment. For information on other quality Hobart products, contact your local Hobart distributor to receive the latest full line catalog or individual catalog sheets. **To locate your nearest distributor or service agency call 1-877-Hobart1.**

## 5/3/1 WARRANTY

Working as hard as you do – every power source from Hobart is backed by the best warranty in the business.

*Hobart offers a Technical Manual which provides more detailed service and parts information for your unit. To obtain a Technical Manual, contact your local distributor. Your distributor can also supply you with Welding Process Manuals such as SMAW, GTAW, GMAW, and GMAW-P.*

HOBART® WELDING PRODUCTS

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**WARRANTY**


## ⚠ WARNING

**This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)**

The following terms are used interchangeably throughout this manual:
Mig = GMAW

# SECTION 1 –SAFETY PRECAUTIONS FOR FCAW AND GMAW WELDING GUNS – READ BEFORE USING

SR7_7/01

## 1-1. Symbol Usage

Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ **Marks a special safety message.**

☞ *Means NOTE; not safety related.*

This group of symbols means Warning! Watch Out! Possible ELECTRIC SHOCK and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

## 1-2. FCAW And GMAW Gun Hazards

### ⚠ WARNING

**GMAW WELDING can be hazardous.**

**PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR.**

In welding, as in most jobs, exposure to certain hazards occurs. Welding is safe when precautions are taken. The safety information given below is only a summary of the more complete safety information found in the wire feeder and welding power source Owner's Manuals. Read and follow all safety precautions.

**HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.**

**ELECTRIC SHOCK can kill.**

1. Always wear dry insulating gloves.
2. Insulate yourself from work and ground.
3. Do not touch live electrode or electrical parts.
4. Repair or replace worn, damaged, or cracked gun or cable insulation.
5. Turn off welding power source before changing contact tip or gun parts.
6. Keep all covers and handle securely in place.

**FUMES AND GASES can be hazardous to your health.**

1. Keep your head out of the fumes.
2. Ventilate area, or use breathing device.
3. Read Material Safety Data Sheets (MSDSs) and manufacturer's instructions for material used.

**WELDING can cause fire or explosion.**

1. Do not weld near flammable material.
2. Do not weld on closed containers.
3. Watch for fire; keep extinguisher nearby.

**BUILD UP OF GAS can injure or kill**

1. Shut off shielding gas supply when not in use.
2. Always ventilate confined spaces or use approved air-supplied respirator.

**ARC RAYS can burn eyes and skin.**

1. Wear welding helmet with correct shade of filter.
2. Wear correct eye and body protection.
3. Cover exposed skin with spatter-resistant clothing.

**HOT SURFACES can burn skin.**

1. Allow gun to cool before touching.
2. Do not touch hot metal.
3. Protect hot metal from contact by others.

**NOISE can damage hearing; SOME APPLICATIONS, SUCH AS PULSING, are noisy.**

1. Check for noise level limits exceeding those specified by OSHA.
2. Use approved ear plugs or ear muffs if noise level is high.
3. Warn others nearby about noise hazard.

**WELDING WIRE can cause puncture wounds.**

1. Keep hands and body away from gun tip when trigger is pressed.

# EMF INFORMATION

**NOTE** ☞

*Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields*

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, *Biological Effects of Power Frequency Electric & Magnetic Fields – Background Paper*, OTA-BP-E-53 (Washington, DC: U.S. Government Printing Office, May 1989): ". . . there is now a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields can interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science-based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around the body.
4. Keep welding power source and cables as far away as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

**About Pacemakers:**

The above procedures are among those also normally recommended for pacemaker wearers. Consult your doctor for complete information.

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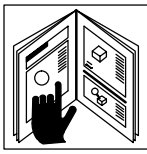
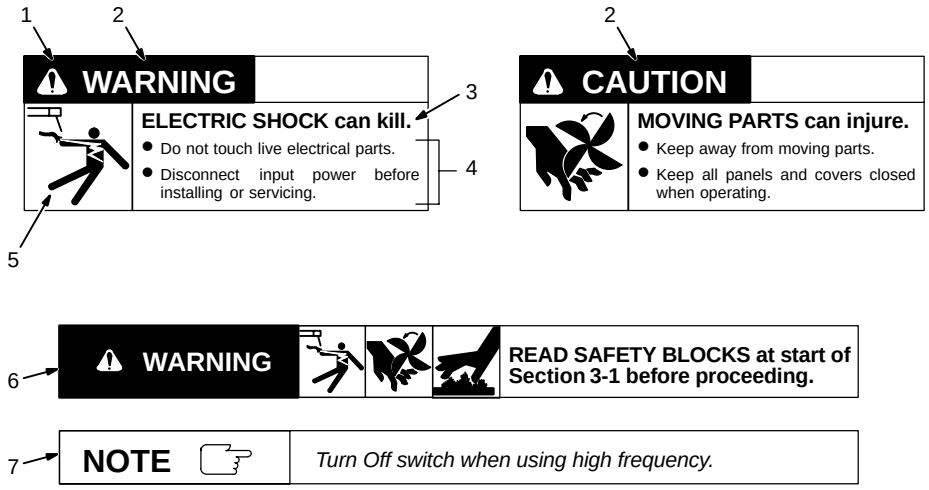
# SECTION 2 – SAFETY INFORMATION



- Read all safety messages throughout this manual.
- Obey all safety messages to avoid injury.
- Learn the meaning of WARNING and CAUTION.




1 Safety Alert Symbol

2 Signal Word

WARNING means possible death or serious injury can happen.

CAUTION means possible minor injury or equipment damage can happen.

3 Statement Of Hazard And Result

4 Safety Instructions To Avoid Hazard

5 Hazard Symbol (If Available)

6 Safety Banner

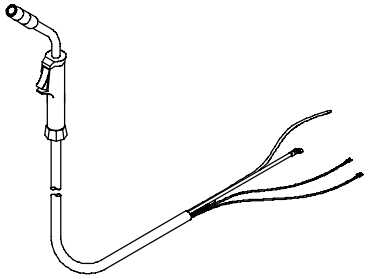
Read safety blocks for each symbol shown.

7 NOTE

Special instructions for best operation – not related to safety.

# SECTION 3 – INSTALLATION

## 3-1. Specifications




Air-Cooled Welding Gun For FCAW And GMAW Welding

**Note:** *Using gasless flux cored wire reduces gun duty cycle.*

H-9 Feeds .030 To .035 in (0.8 To 0.9 mm) Flux Cored Wire Or .024 To .030 in (0.6 To 0.8 mm) Hard Wire Duty Cycle Rating:

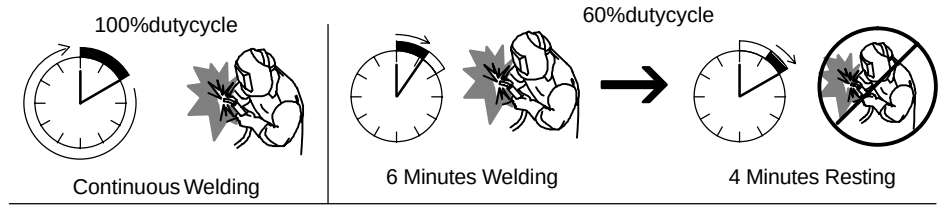
100%: 40 A With Flux Cored Wire
100%: 100 A With $CO_2$ Shielding Gas
60%: 100 A With Mixed Gases
Weight With 8 ft (2.4 m) Power Cable: 2.2 lb (1.0 kg)

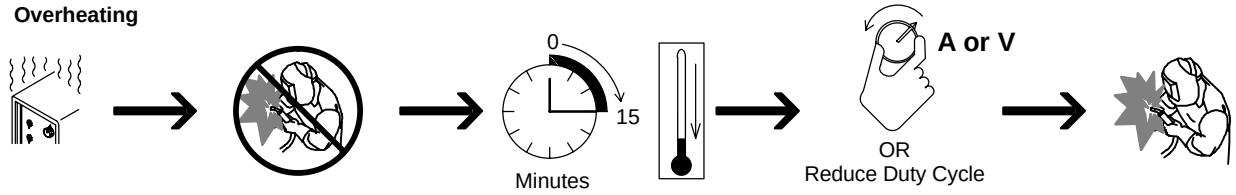
## 3-2. Duty Cycle And Overheating

See Section 3-1. Specifications for amperage rating and duty cycle.

Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

▲ **Exceeding duty cycle can damage unit and void warranty.**

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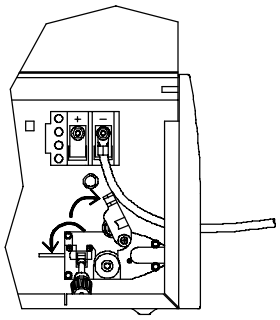
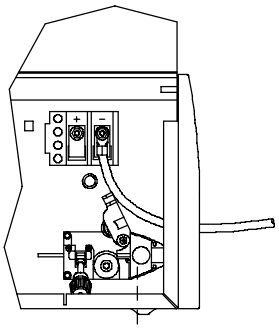
## 3-3. Installing Gun Into Welding Power Source

☞ *If existing gun requires removal, see Section 5-6.*

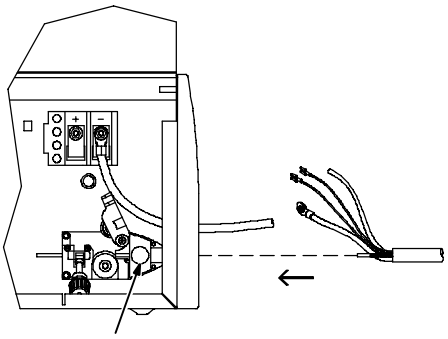
▲ **Turn off welding power source.**



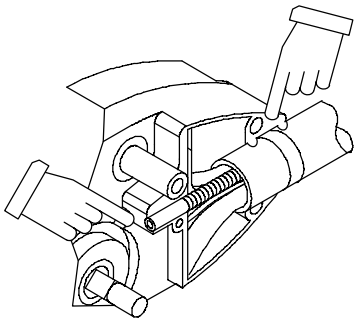
Open pressure assembly.



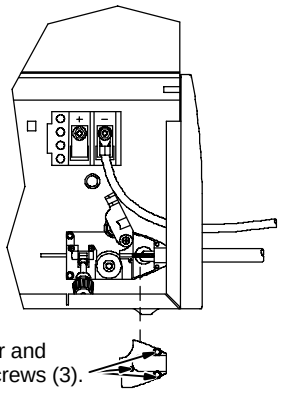
Remove screws (3) from cover, and remove cover from wire drive assembly.



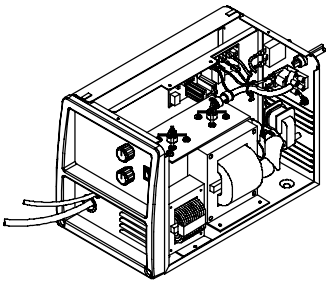
Insert gun cable through opening in front panel. Route weld cable, trigger leads, and gas hose through opening in drive housing.



Install cable end into drive housing with retaining ring between the two locating ribs. Position liner in groove so that black tubing end is flush with back of groove.

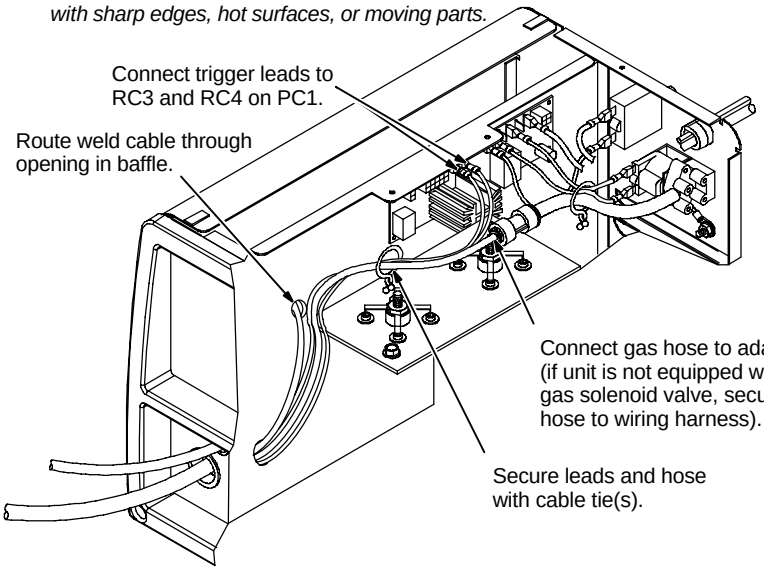


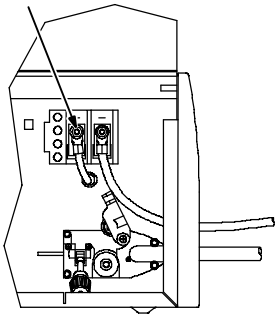
Reinstall cover and secure with screws (3).



Remove wrapper from unit.

☞ *Route wires, cable, and hose to avoid contact with sharp edges, hot surfaces, or moving parts.*


Connect trigger leads to RC3 and RC4 on PC1.
Route weld cable through opening in baffle.
Connect gas hose to adapter (if unit is not equipped with gas solenoid valve, secure hose to wiring harness).
Secure leads and hose with cable tie(s).



Connect weld cable to weld terminal.

Reinstall wrapper onto unit.

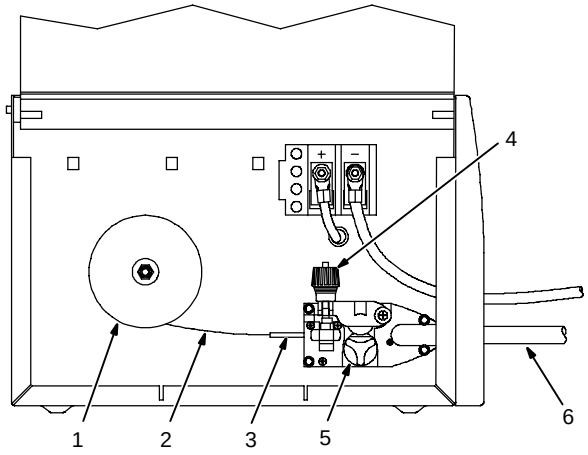
☞ *Thread wire according to Section 3-4.*

803 497-A / Ref. 803 378-A

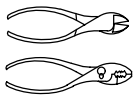
## 3-4. Threading Welding Wire

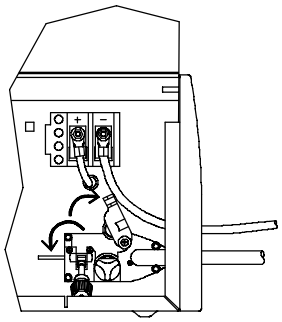
1 Wire Spool
2 Welding Wire
3 Inlet Wire Guide
4 Pressure Adjustment Knob
5 Drive Roll
6 Gun Cable

Lay gun cable out straight.



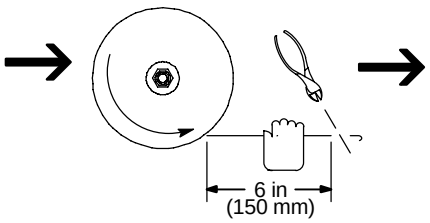

Tools Needed:



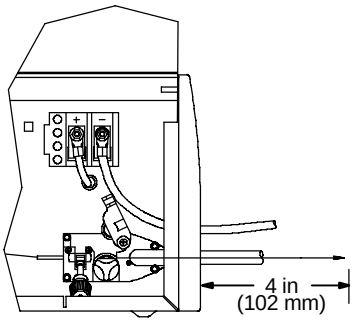


Open pressure assembly.

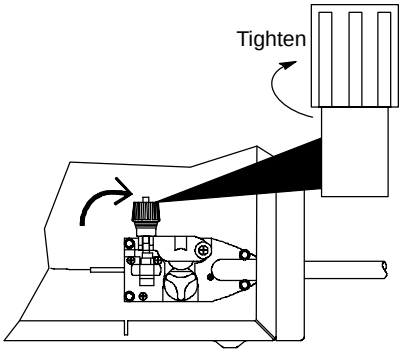
☞ *Hold wire tightly to keep it from unraveling.*




Pull and hold wire; cut off end.

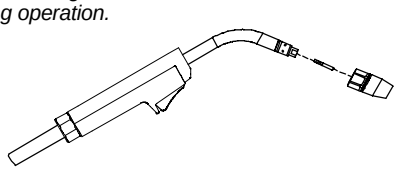



Push wire thru guides into gun liner; continue to hold wire.



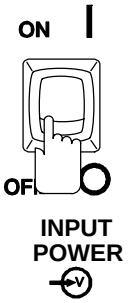

Be sure that wire is positioned in proper feed roll groove. Close and tighten pressure assembly, and let go of wire.

☞ *Rotate pressure adjustment knob in a clockwise direction until drive roll is tight against the welding wire. Adjust drive roll pressure just tightly enough to prevent wire from slipping on or against drive roll during operation.*

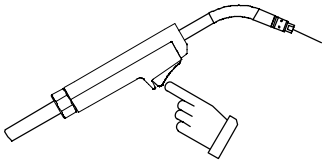


Remove gun nozzle and contact tip.

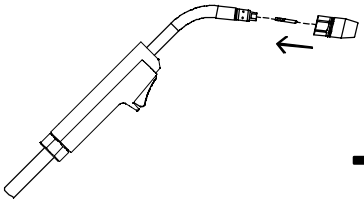
☞ *Tip adapter may also require removal to allow wire to feed out end of gun.*



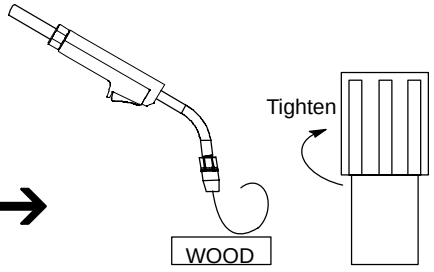

Turn power on.



Press gun trigger until wire comes out of gun.



Be sure that contact tip matches wire diameter. Reinstall tip adapter, if applicable, contact tip and nozzle.

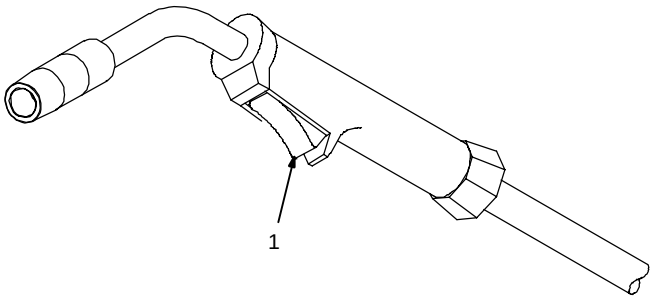



Feed wire to check drive roll pressure. Tighten knob enough to prevent slipping. Cut off wire. Close door.

Ref. 803 444-A / Ref. 205 837

# SECTION 4 – OPERATION

## 4-1. Operating The Gun



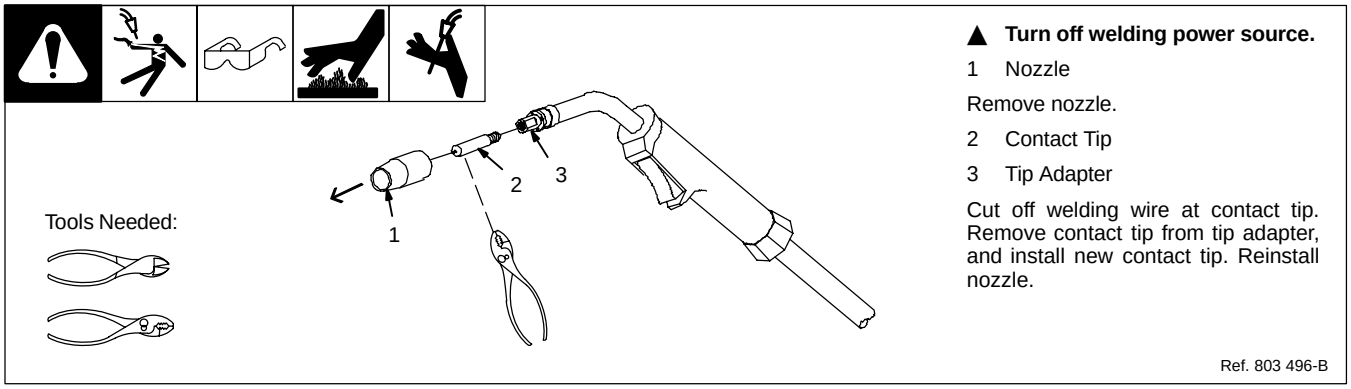

1 Trigger Switch

When pressed, energized wire feeds and shielding gas flows.

Ref. 803 495-A

# SECTION 5 – MAINTENANCE & TROUBLESHOOTING

## 5-1. Replacing Gun Contact Tip




▲ **Turn off welding power source.**

1 Nozzle

Remove nozzle.

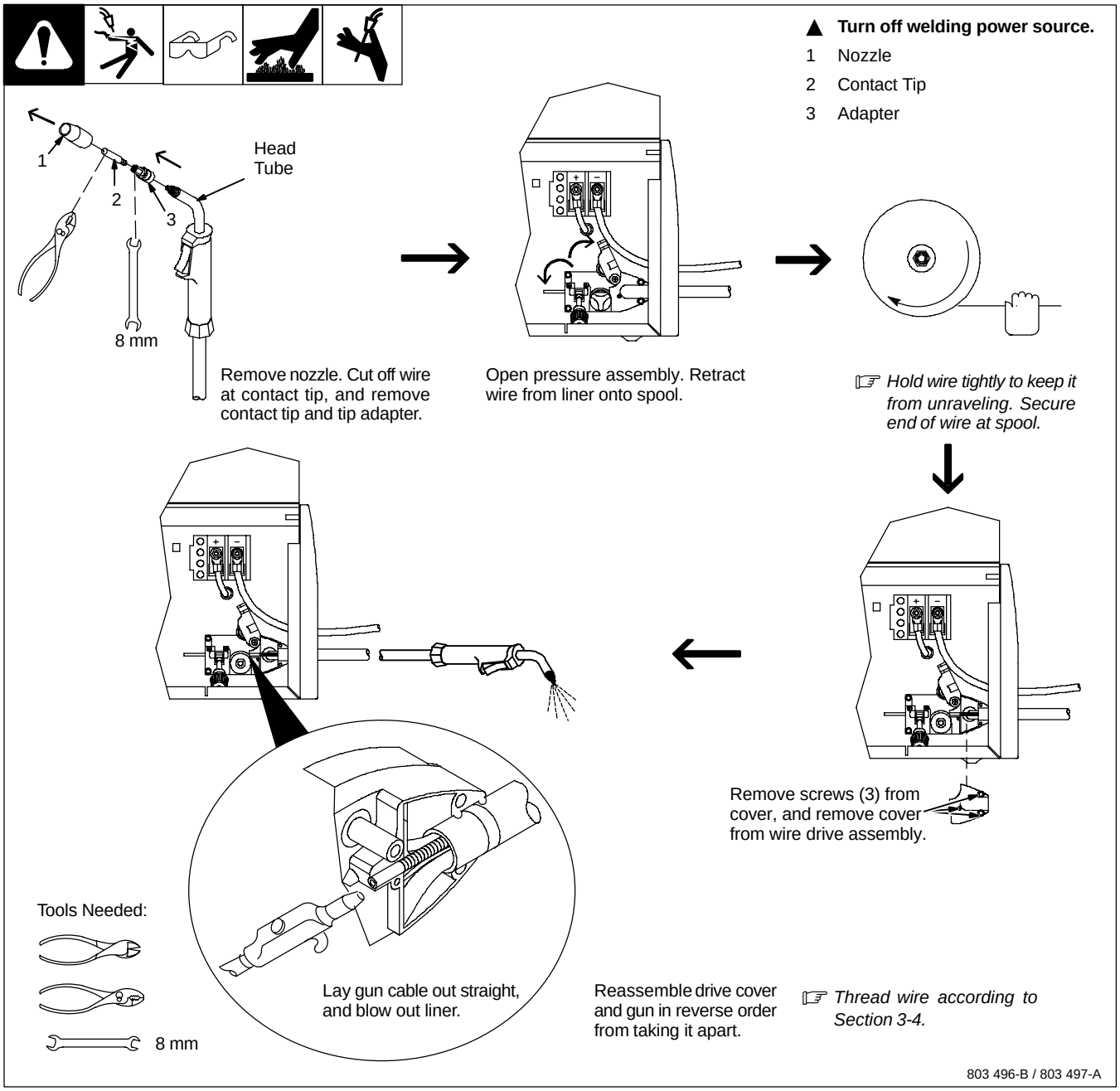
2 Contact Tip

3 Tip Adapter

Cut off welding wire at contact tip. Remove contact tip from tip adapter, and install new contact tip. Reinstall nozzle.

Ref. 803 496-B

## 5-2. Cleaning Gun Liner




▲ **Turn off welding power source.**

1 Nozzle

2 Contact Tip

3 Adapter

Remove nozzle. Cut off wire at contact tip, and remove contact tip and tip adapter.

Open pressure assembly. Retract wire from liner onto spool.

☞ *Hold wire tightly to keep it from unraveling. Secure end of wire at spool.*

Remove screws (3) from cover, and remove cover from wire drive assembly.

Lay gun cable out straight, and blow out liner.

Reassemble drive cover and gun in reverse order from taking it apart.

☞ *Thread wire according to Section 3-4.*

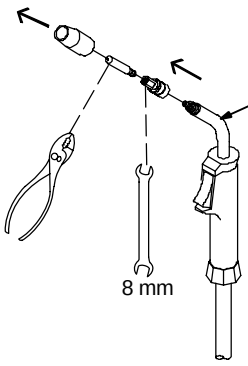
803 496-B / 803 497-A

## 5-3. Replacing Gun Liner

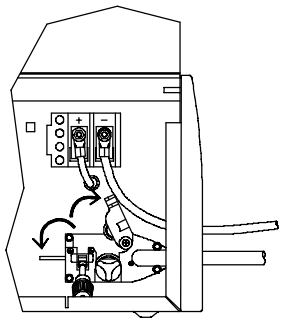
▲ **Turn off welding power source.**

Tools Needed:

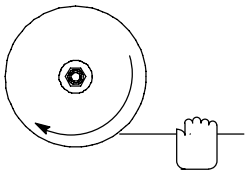
8 mm / 10 mm



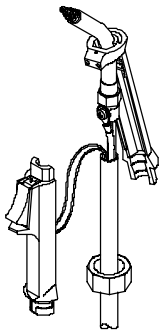

Remove nozzle. Cut off wire at contact tip, and remove contact tip and tip adapter.



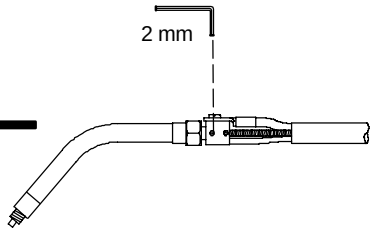
Open pressure assembly. Retract wire from liner onto spool.



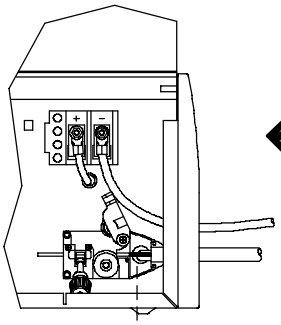
☞ *Hold wire tightly to keep it from unraveling. Secure end of wire at spool.*



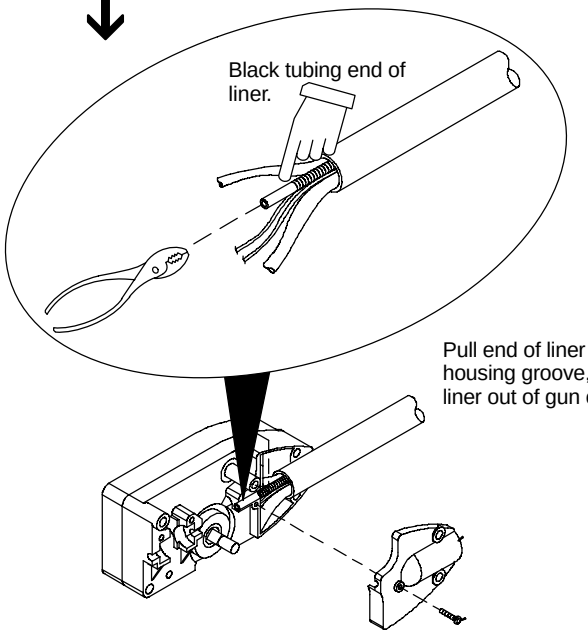
Twist handle locking ring counterclockwise 1/4 turn and slide it down cable. Separate gun handle by lifting top rear portion up and sliding forward over head tube.



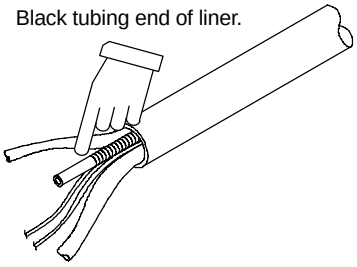

Loosen liner setscrew with allen wrench.



Remove screws (3) from cover, and remove cover from wire drive assembly.




Pull end of liner out from housing groove, and pull liner out of gun cable.




Lay gun cable straight on a flat surface. Insert bare end of liner (end without black tubing) into wire drive end of cable. Push liner toward gun. If necessary, twist cable to ease installation.

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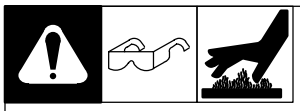
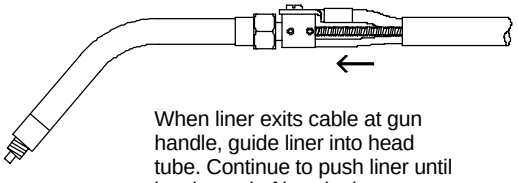
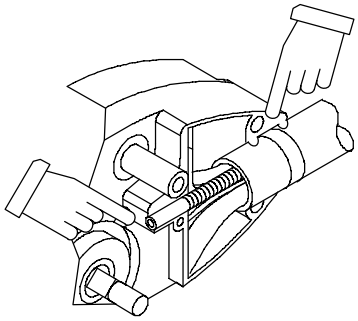
## 5-3. Replacing Gun Liner (Continued)

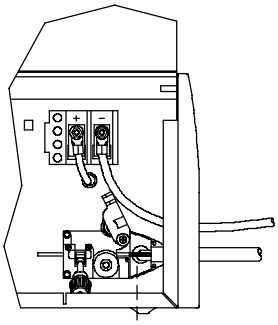




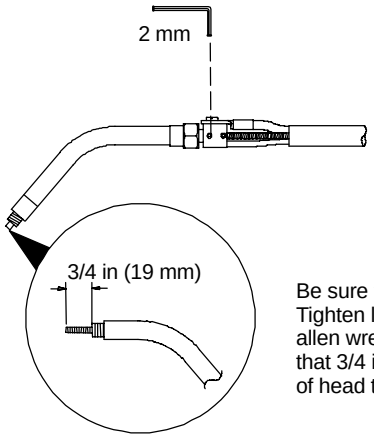
When liner exits cable at gun handle, guide liner into head tube. Continue to push liner until it exits end of head tube.



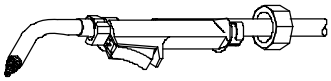
Reinstall cable end into drive housing with retaining ring between the two locating ribs. Position liner in groove so that black tubing end is flush with back of groove.



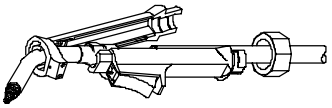
Reinstall cover onto wire drive assembly, and secure with screws (3).



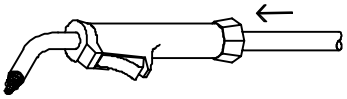

Be sure that cable is straight. Tighten liner setscrew with allen wrench. Cut liner so that 3/4 in (19 mm) sticks out of head tube.



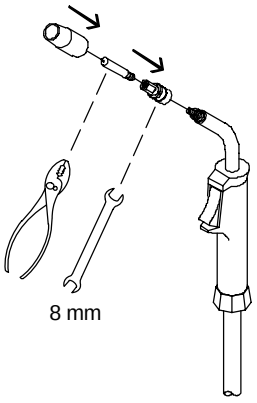
Reassemble gun by placing head tube into bottom section of handle.



Slide top portion of handle over head tube.



Lower top portion of handle onto bottom of handle. Slide locking ring over rear of handle, and secure with by twisting ring clockwise 1/4 turn.



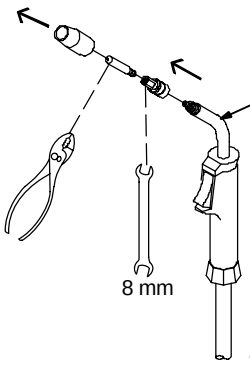

Thread welding wire through gun (see Section 3-4). Reinstall adapter, contact tip, and nozzle.

## 5-4. Replacing Liner O-Ring

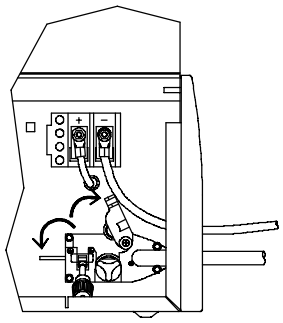
▲ **Turn off welding power source.**

Tools Needed:

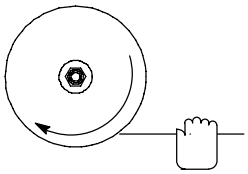
8 mm / 10 mm



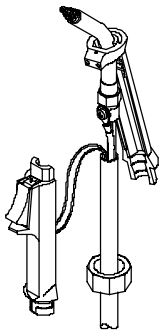

Remove nozzle. Cut off wire at contact tip, and remove contact tip and tip adapter.



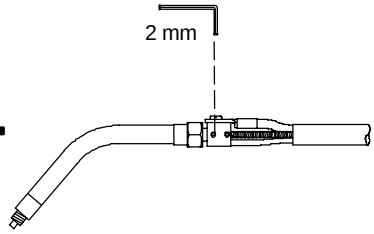
Open pressure assembly. Retract wire from liner onto spool.



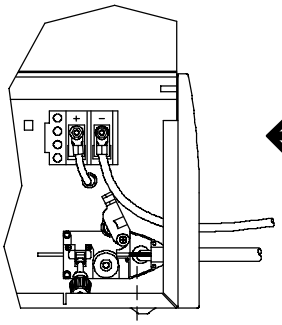
☞ *Hold wire tightly to keep it from unraveling. Secure end of wire at spool.*



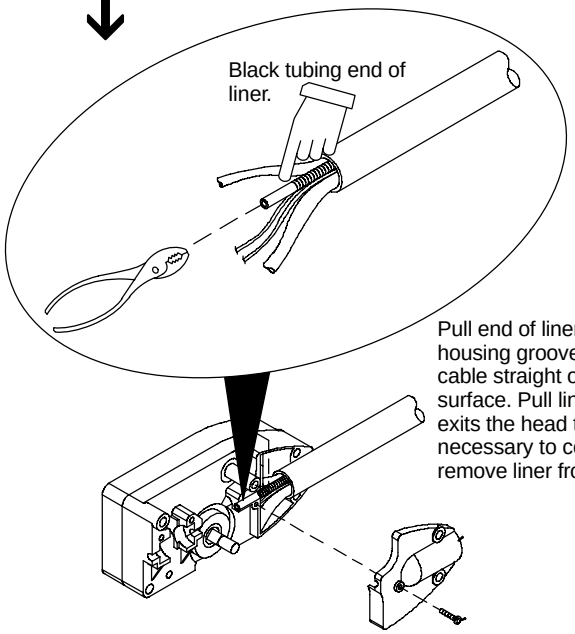
Twist handle locking ring counterclockwise 1/4 turn and slide it down cable. Separate gun handle by lifting top rear portion up and sliding forward over head tube.



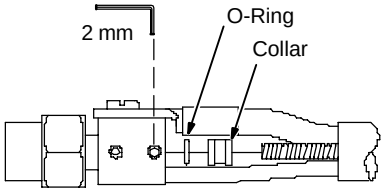

Loosen liner setscrew with allen wrench.



Remove screws (3) from cover, and remove cover from wire drive assembly.




Pull end of liner out from housing groove, Lay gun cable straight on a flat surface. Pull liner until it exits the head tube. It is not necessary to completely remove liner from gun.




Loosen collar setscrew with allen wrench. Remove collar and O-ring. Install replacement O-ring, reinstall collar, and tighten setscrew.

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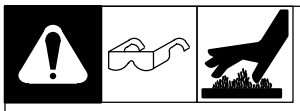
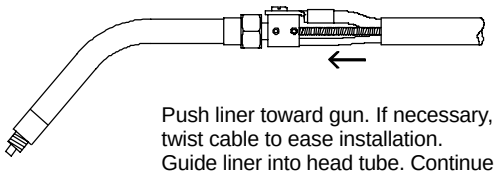
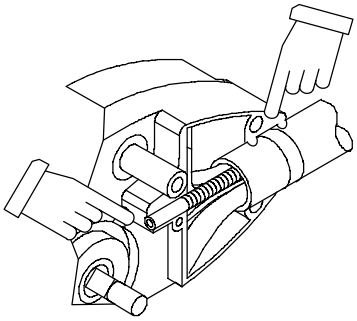
## 5-3. Replacing Liner O-Ring (Continued)

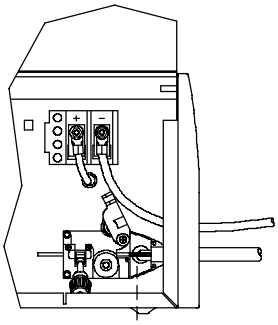




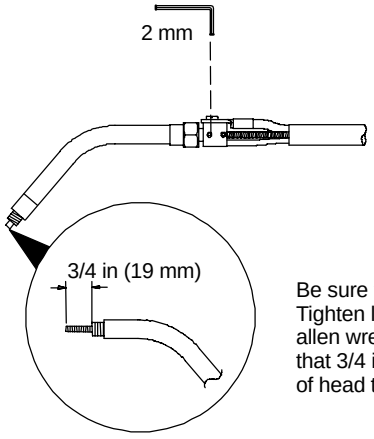
Push liner toward gun. If necessary, twist cable to ease installation. Guide liner into head tube. Continue to push liner until it exits end of head tube.



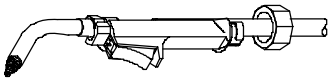
Reinstall cable end into drive housing with retaining ring between the two locating ribs. Position liner in groove so that black tubing end is flush with back of groove.



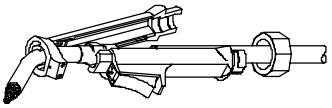
Reinstall cover onto wire drive assembly, and secure with screws (3).



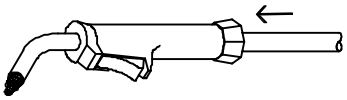

Be sure that cable is straight. Tighten liner setscrew with allen wrench. Cut liner so that 3/4 in (19 mm) sticks out of head tube.



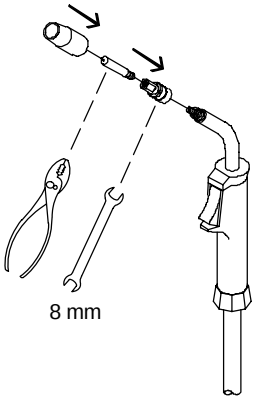
Reassemble gun by placing head tube into bottom section of handle.



Slide top portion of handle over head tube.

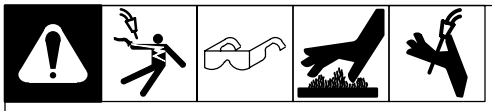


Lower top portion of handle onto bottom of handle. Slide locking ring over rear of handle, and secure with by twisting ring clockwise 1/4 turn.

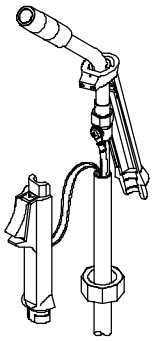



Thread welding wire through gun (see Section 3-4). Reinstall adapter, contact tip, and nozzle.

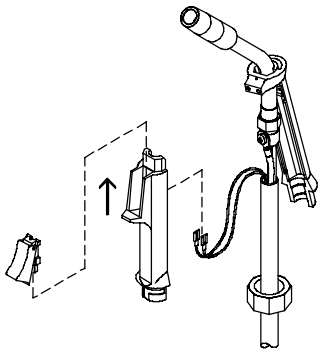
## 5-5. Replacing Switch And/Or Head Tube



▲ **Turn Off welding power source.**



Twist handle locking ring counterclockwise 1/4 turn and slide it down cable. Separate gun handle by lifting top rear portion up and sliding forward over head tube.



Slide trigger assembly forward and out of lower portion of handle. Disconnect leads. Install new switch and connect leads (polarity is not important). Reassemble in reverse order. If replacing head tube, continue to end of figure.

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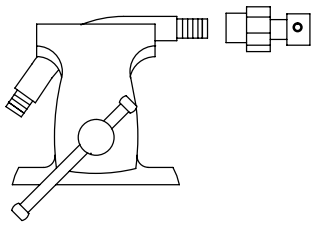
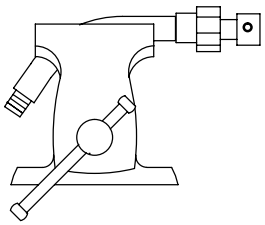
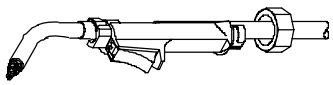
Remove nozzle, contact tip, and adapter. Secure head tube in vice. Loosen cable connector. Remove from vice and turn head tube out by hand.



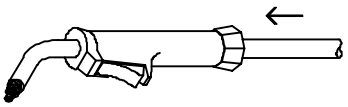
Hand-tighten head tube into cable connector. Place head tube in vice and tighten until cable connector is tight.



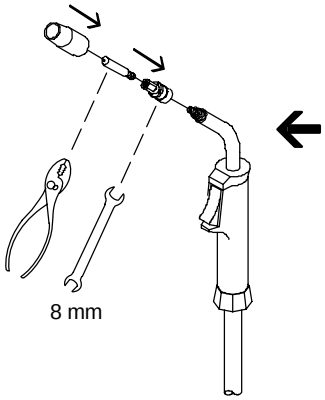
Reassemble gun by placing head tube into bottom section of handle.



Slide top portion of handle over head tube.

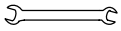


Lower top portion of handle onto bottom of handle. Slide locking ring over rear of handle, and secure with by twisting ring clockwise 1/4 turn.




Thread welding wire through gun (see Section 3-4). Reinstall adapter, contact tip, and nozzle.

Tools Needed:



8 mm, 11/16 in

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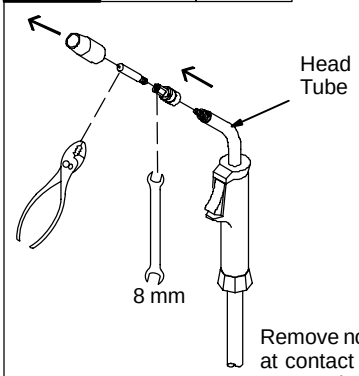
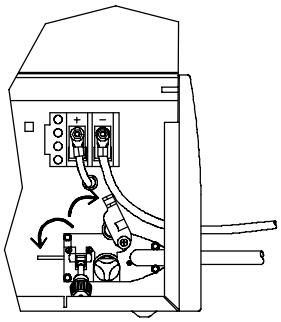
## 5-6. Removing Gun From Welding Power Source

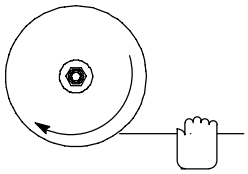
▲ **Turn off welding power source.**



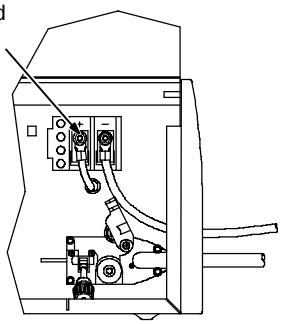

Remove nozzle. Cut off wire at contact tip, and remove contact tip and tip adapter.

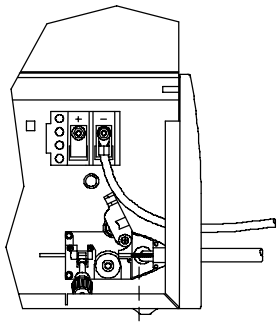


Open pressure assembly. Retract wire from liner onto spool.

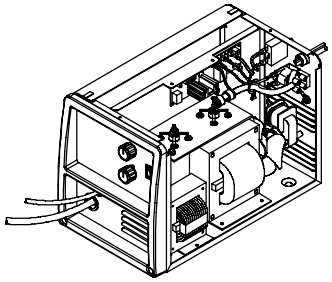


☞ *Hold wire tightly to keep it from unraveling. Secure end of wire at spool.*

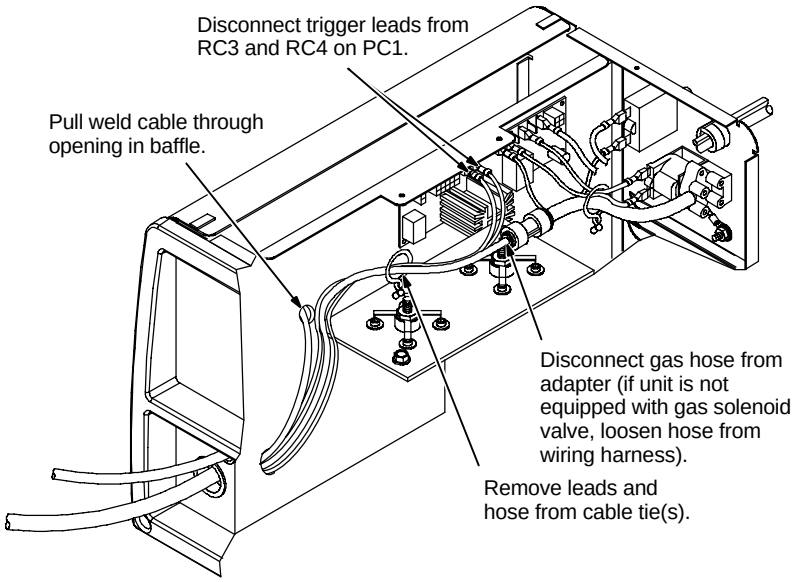


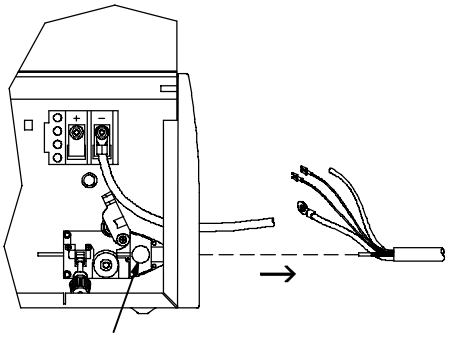



Remove screws (3) from cover, and remove cover from wire drive assembly.



Remove wrapper from unit.


Disconnect trigger leads from RC3 and RC4 on PC1.
Pull weld cable through opening in baffle.
Disconnect gas hose from adapter (if unit is not equipped with gas solenoid valve, loosen hose from wiring harness).
Remove leads and hose from cable tie(s).



Pull weld cable, trigger leads, and gas hose through opening in drive housing. Pull gun cable out through opening in front panel. To reinstall gun see Section 3-3.

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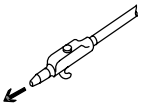
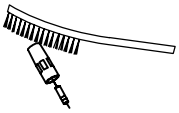
## 5-7. Routine Maintenance

▲ **Turn Off welding power source before maintaining.**

### Each Spool Of Wire

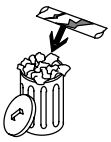


Blow Out Gun Casing

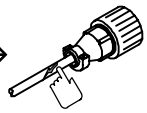


Clean Nozzle And Check Contact Tip

### 3 Months



Replace Cracked Parts →

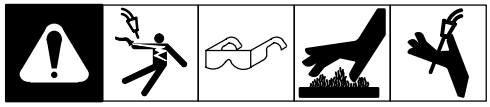


Control Cord →

Gas Hose →

Gun Cable

## 5-8. Troubleshooting



| Trouble | Remedy |
|---|---|
| Wire does not feed; wire is not energized; wire feeds unevenly. | Check contact tip. Check for kinks in gun cable. |
| | Check contact tip. Check for kinks in gun cable. Blow out gun liner (see Section 5-2). |
| | Check for secure gun trigger lead connections at PC1 (see Section 3-3). |
| | Check, and if necessary, replace gun trigger switch (see Section 5-5). |
| Weld porosity. | Remove weld spatter buildup in nozzle. |
| | Make sure inner head tube is tight in cable connector. |
| | Check shielding gas flow/supply. |
| | Replace liner O-ring (see Section 5-4). |
| Wire feeding stops or does not feed properly during welding. | Straighten gun cable and/or replace damaged parts (see Section 5-2 or 5-3). |
| | Adjust drive roll pressure (see Section 3-4). |
| | Change to proper drive roll groove (see welding power source manual). |
| | Readjust hub tension (see weld power source manual). |
| | Clean or replace liner if dirty or plugged (see Section 5-2 or 5-3). |
| | Replace drive roll or pressure bearing if worn or slipping (see welding power source manual). |

# SECTION 6 – PARTS LIST

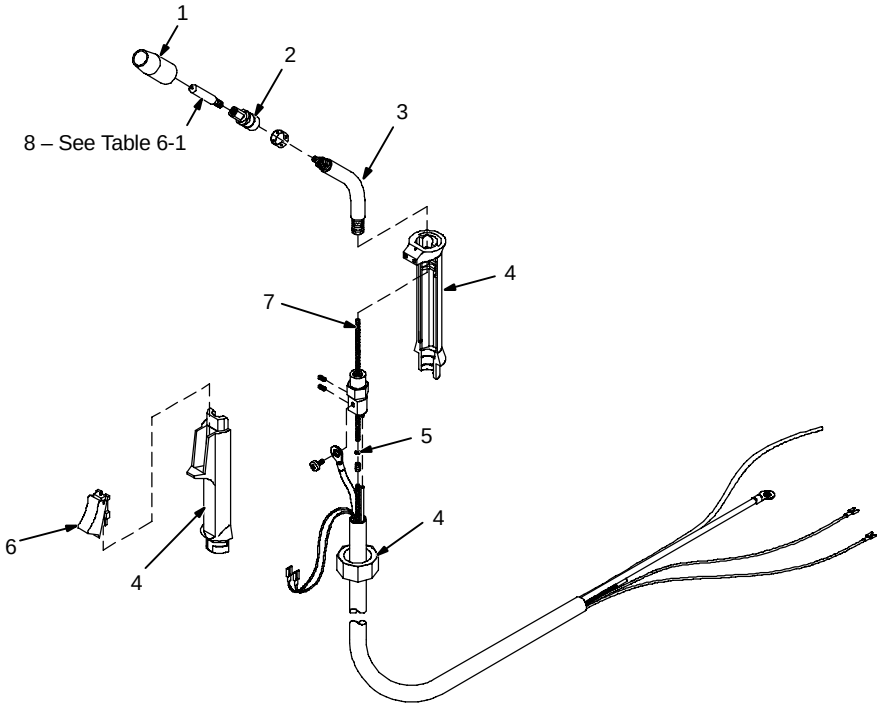



**Figure 6-1. H-9 Gun**

| Item No. | Part No. | Description | Quantity |
|---|---|---|---|
| | **195 157** | **Figure 6-1. H-9 Gun** | |
| 1 | 169 715 | NOZZLE, slip type .500 orf flush | 1 |
| 2 | 169 716 | ADAPTER, contact tip | 1 |
| 3 | 210 969 | TUBE, head | 1 |
| 4 | 211 450 | HANDLE, top/bottom/cap | 1 |
| 5 | 214 738 | O-RING | 1 |
| 6 | 211 449 | SWITCH, trigger | 1 |
| 7 | 210 970 | LINER, monocoil .023/.035 wire x 8ft | 1 |
| 8 | ♦087 299 | TIP, contact scr .023 wire x 1.125 | |
| 8 | 000 067 | TIP, contact scr .030 wire x 1.125 | 1 |
| 8 | ♦000 068 | TIP, contact scr .035 wire x 1.125 | |

♦OPTIONAL

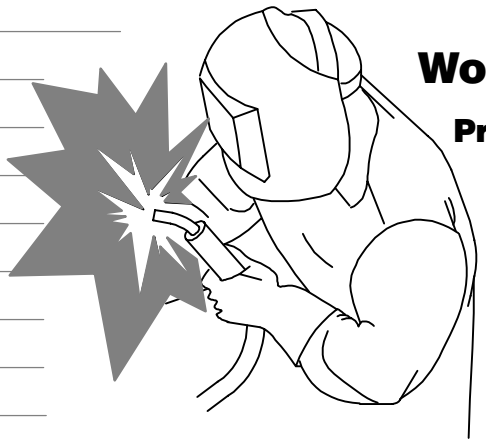
**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

**Table 6-1. Contact Tip Options**

| HOBART PART NO. | DESCRIPTION | REMARKS |
|---|---|---|
| 196 134 | Tip, contact scr .023 wire | Pkg of 5 |
| 196 131 | Tip, contact scr .030 wire | Pkg of 5 |
| 196 132 | Tip, contact scr .035 wire | Pkg of 5 |
| 196 137 | Nozzle, slip type .500 orf flush | Qty 1 |
| 196 135 | Adapter, contact tip | Qty 1 |

| WELD-IT PART NO. | DESCRIPTION | REMARKS |
|---|---|---|
| 770 174 | Tip, contact scr .023 wire | Pkg of 5 |
| 770 177 | Tip, contact scr .030 wire | Pkg of 5 |
| 770 180 | Tip, contact scr .035 wire | Pkg of 5 |

# Notes



**Work like a Pro!**

**Pros weld and cut safely. Read the safety rules at the beginning of this manual.**

# Notes

# Notes

*Warranty Questions?*

Call
1-877-HOBART1
for your local
Hobart distributor.

**Service**
You always get the fast, reliable response you need. Most replacement parts can be in your hands in 24 hours.

**Support**
Need fast answers to the tough welding questions? Contact your distributor or call 1-800-332-3281. The expertise of the distributor and Hobart is there to help you, every step of the way.

HOBART WELDERS

# HOBART 5/3/1 WARRANTY

## Effective January 1, 2002

5/3/1 WARRANTY applies to all Handler 135 and 175 models, Airforce 250, 250A, and 375 models, and Champion 10,000 models.This warranty also applies to the Beta-Mig 1800, Champ 1435, 2060, 8500 models, Ironman 250, Stickmate models, Tigmate models, and HSW-15 and HSW-25 spot welder models effective with Serial No. KK200262 and newer.

This limited warranty supersedes all previous Hobart warranties and is exclusive with no other guarantees or warranties expressed or implied.
Hobart products are serviced by Hobart or Miller Authorized Service Agencies.

LIMITED WARRANTY – Subject to the terms and conditions below, Hobart/Miller Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new Hobart equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Hobart. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Hobart/Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Hobart/Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Hobart/Miller will provide instructions on the warranty claim procedures to be followed.

Hobart/Miller shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to a North American distributor or eighteen months after the equipment is sent to an International distributor.

1. 5 Years — Parts and Labor
   * Original Main Power Rectifiers
   * Transformers
   * Stabilizers
   * Reactors
   * Rotors, Stators and Brushes
2. 3 Years — Parts and Labor
   * Drive Systems
   * PC Boards
   * Idle Module
   * Solenoid Valves
   * Switches and Controls
   * Spot Welder Transformer
3. 1 Year — Parts and Labor Unless Specified (90 days for industrial use)
   * Motor-Driven Guns
   * MIG Guns/TIG Torches
   * Relays
   * Contactors
   * Regulators
   * Water Coolant Systems
   * Flowgauge and Flowmeter Regulators (No Labor)
   * HF Units
   * Running Gear/Trailers
   * Plasma Cutting Torches
   * Remote Controls
   * Replacement Parts (No labor)
   * Accessories
   * Field Options
     (NOTE: Field options are covered for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
4. Engines, batteries and tires are warranted separately by the manufacturer.

Hobart's 5/3/1 Limited Warranty shall not apply to:

1. **Consumable components such as contact tips, cutting nozzles, slip rings, drive rolls, gas diffusers, plasma torch tips and electrodes, weld cables, and tongs and tips, or parts that fail due to normal wear.**
2. Items furnished by Hobart/Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Hobart/Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

HOBART PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Hobart's/Miller's option: (1) repair; or (2) replacement; or, where authorized in writing by Hobart/Miller in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized Hobart/Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. Hobart's/Miller's option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a Hobart/Miller authorized service facility as determined by Hobart/Miller. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HOBART/MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY HOBART/MILLER IS EXCLUDED AND DISCLAIMED BY Hobart/Miller.

Some states in the U.S.A. do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, so the above limitation or exclusion may not apply to you. This warranty provides specific legal rights, and other rights may be available, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be waived, the limitations and exclusions set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

# Owner's Record

Please complete and retain with your personal records.

Model Name Serial/Style Number

Purchase Date (Date which equipment was delivered to original customer.)

Distributor

Address

City

State Zip

# Resources Available

Always provide Model Name and Serial/Style Number.

| | |
|---|---|
| **To locate a Distributor, retail or service location:**<br><br>Call 1-877-Hobart1 or visit our website at www.HobartWelders.com<br><br>**For technical assistance:**<br><br>Call 1-800-332-3281 | **Contact your Distributor for:**<br><br>Welding Supplies and Consumables<br>Options and Accessories<br>Personal Safety Equipment<br>Service and Repair<br>Replacement Parts<br>Training (Schools, Videos, Books)<br>Technical Manuals (Servicing Information and Parts)<br>Circuit Diagrams<br>Welding Process Handbooks |
| Contact the Delivering Carrier to: | File a claim for loss or damage during shipment.<br><br>For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department. |

**Hobart Welding Products**
An Illinois Tool Works Company
600 West Main Street
Troy, OH 45373 USA

**For Technical Assistance:**
Call1-800-332-3281
For Literature Or Nearest Dealer:
Call 1-877-Hobart1

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